

Appendix A: Standards, Guidelines, Ratings

The recommendations of this trail summary and inventory draw upon the following listed guidelines. These are provided as background references and are provided to assist in understanding the information presented and how ratings were determined. Trail condition ratings vary from park to park and from agency to agency. Point Reyes NS staff uses this handbook and guidelines but also draws upon state park guidelines and wilderness legislation and provisions and other environmental legislation.

National Park Service – The most recent NPS document providing guidance for trail construction and maintenance is the *NPS Trails Management Handbook*, published in 1983 by the Denver Service Center. Noting that each park area needs to develop its own specific standards, the 53-page handbook offers good general guidelines for trail design and selection of trail alignments. It also suggests guidelines for trail maintenance and design and construction of trail features such as turnpikes, drainage structures and signs. The following is a sampling of some of the more relevant guidelines in the handbook:

- Existing trails should be integrated with new construction as much as possible providing old trails were properly laid out and have good drainage.
- For interpretive purposes, the trail should meander to take advantage of scenic panoramas and historic, cultural and natural resources.
- The alignment should follow the contours of the land and be generally curved. Sharp angular turns over 50 degrees and long straight stretches should be avoided.
- Hillside alignments should, wherever possible, angle across the natural slope and take advantage of natural drainage to minimize the need for major drainage modifications.
- As a general rule, a grade should not be steeper than 10%. Grades of less than 7% are ideal.
- Trail dimensions should be based on the type and volume of use anticipated, on the stability of native materials, and on the type of terrain along the route. Generally a trail tread width should not be less than 18 inches for foot trails and 24 inches for horse trails. Additional width could be required to reduce impacts from heavy traffic.
- Avoid sensitive habitat and species.

Maintenance guidelines in the report include direction on how to develop trail logs and a suggested hierarchy of maintenance levels. The handbook defines 5 types of trails as follows:

- **Type A- Major Trails**- Marked routes that are improved and maintained for foot and horseback traffic. Minimum tread width is usually 24 inches, and overall grade is less than 10 percent. For distances less than 150 feet, grade should not exceed 15 percent. Type A trails are to have first priority for maintenance.
- **Type B- Minor Trails**- Also improved and maintained for foot and horseback traffic, but reflect an overall lower construction standard than Type A trails. The tread does not have to meet the maximum width standard and may be limited to the space required to form a single-file trail. Overall grade should be less than 15%. For distances less than 150 feet, grade should not exceed 18 percent.
- **Type C- Wilderness Trails**- These are marked trails but are generally unimproved except for clearing. Minimum tread width is 18 inches, with an overall grade of less than 15

percent. For distances of less than 150 feet, grade should not exceed 20 percent. These trails have the lowest maintenance priority except where safety is concerned.

- Type D- Walks- Surfaced for foot and wheelchair travel and built to high standards.
- Type E- Other- Specialized trails including bicycle and snowmobile routes.

Point Reyes National Seashore - These ratings are a combination of existing trail conditions against what a properly designed trail should be. Definitions should note the physical characteristics that allow the trail to erode and fail in storm events even with cyclic maintenance completed.

Fair

Trail Grade: Greater than 50% of a trail at a 5-10% grade

Alignment or type of construction: Greater than 50% of trail side-hill construction, trail alignment parallel to contour lines. Trail constructed above wet areas.

Erosion: Developed trench in trail 0-6 inches deep.

Trail width: Erosion surface area: 8 feet or less.

Water crossings: Bridges or rocked water crossings.

Poor

Trail grade: 50% of a trail at 5-10% grade, 50% at a 10% grade and above

Alignment or type of construction: 50% of trail side-hill construction, trail alignment parallel to contour lines, 50% through-cut construction, trail alignment perpendicular to contour lines.

Erosion: Developed trench in trail 6-12 inches deep.

Trail width, erosion surface area: 8-16 feet

Water crossings: Culverts or non-hardened, eroding unimproved streambeds

Replace

Trail grade: Less than 50% of trail at a 5-10% grade, greater than 50% at a 10% above

Alignment of construction: less than 50% of a trail side-hill construction, trail alignment parallel to contour lines, greater than 50% thorough cut construction, trail alignment perpendicular to contour lines.

Erosion: Developed trench in trail greater than 12 inches deep.

Trail width, erosion surface area: Greater than 16 feet.

Water crossings: Older culverts or non-hardened, eroding unimproved streambeds.

Marin County- The trails element of the Marin Countywide Plan recognizes three types of trails: single track trails- unpaved, varying in width and too narrow for service vehicles; double-track trails- unpaved and wide enough to accommodate fire protection and service vehicles; and Class I bicycle paths. These trail types support four use designations:

- Hiking-only- These trails are intended to provide opportunities to enjoy the interpretive experience and aesthetic qualities in open space areas without distractions from other users. Improvements may vary, but a minimum tread width of two to three feet is normally required. On some steep slopes, the tread width may diminish to 12 to 18 inches, but only for short distances. Grades may vary, but 10% or less is desirable and 15-20% is acceptable for short distances. Trails with grades in excess exist in the County. These trails are not appropriate for equestrian or bicycle use, due to concerns about quality of

experience, safety, susceptibility to erosion and physical constraints such as steep gradients, narrow tread, overhead clearance and obstructions.

- Equestrian/Hiking- These trails provide a leisurely horseback riding or hiking experience. They are unpaved and the developed width may vary from three to six feet. Gradients are similar to those for hiking-only trails. These trails are not appropriate for bicycle use because of potential safety problems and diminished quality of experience.
- Combined Use- These trails provide an opportunity for combined use by cyclists, hikers and equestrians. They require substantial overhead clearance, generally a width of 10 to 12 feet, and do not exceed moderately steep gradients. They often serve as fire protection routes.
- Paved Paths- Generally intended for bicycle and foot traffic, these trails typically offer a paved surface 8 to 10 feet wide, with an 18 inch unpaved pedestrian/jogging path on one or both sides. Equestrian use of these paths is generally not considered to be compatible.

Marin Municipal Water District - As part of the District's *Trails Management Program* approved by the Board of Directors in 1985, staff prepared a set of trail standards that include the following:

- For newly constructed trails, grades of 8% or less are desirable; grades exceeding 15% are not recommended. Where grade exceeds 15%, use of steps and switchbacks should be examined.
- Generally trail tread widths should be about 30 inches; however, width may vary according to use, grade, slope and soil type. In no instance shall the trail tread be less than 18 inches or more than 36 inches for hiking trails and 48 inches for equestrian trails.

Appendix B: Maps of Proposed Trail Routes













